

## REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Official Action dated February 25, 2004 and the phone conversation with the Examiner on May 24, 2004.

The Examiner indicated that the amendments appeared to address the pending U.S.C. § 101 and 112 issues; nevertheless, she will review the file history as a whole to make the final determination after the response is formally filed. Applicants thank the Examiner for taking the time to look at the draft response.

In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due consideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

### Status of the Claims

Claims 1-15 are under consideration in this application. Claims 1, 3, 5-6, 8, 12 and 14 are being amended, as set forth in the above marked-up presentation of the claim amendments, in order to more particularly define and distinctly claim applicants' invention.

### Additional Amendments

The claims are being amended to correct formal errors and/or to better recite or describe the features of the present invention as claimed. All the amendments to the claims are supported by the specification. Applicants hereby submit that no new matter is being introduced into the application through the submission of this response.

### Formality Rejections

Claims 1-7 and 14 remain rejected under 35 U.S.C. § 101 due to the claiming of the non-statutory subject matter. Claim 1, 2 and 10 were rejected for informality, claims 1, 8-9 and 14-15 were rejected under 35 U.S.C. §112, first paragraph, for containing new matters not being supported by the specification, and claims 1, 5-6 and 12 were rejected under 35 U.S.C. §112, second paragraph, for being indefinite.

Regarding claims 1-7 and 14 being rejected under 35 U.S.C. § 101 due to the claiming of the non-statutory subject matter. Applicants contend that the recitation of "thereby grouping biopolymers in the selected subtree into at least one function group sharing a common functional

characteristic (“*gene groups with similar functions*” p. 8, lines 17-18; “*genes belonging to the same cluster may possibly share common functional characteristics*” p. 3, line 7-8) is being added to each independent claim to provide a practical application of the invention in the technological art of gene expression analysis. Applicants contend that such recitation in conjunction with the displaying of a selected subtree visually allows one skilled in the art to “*see whether relative genes are assembled in a subtree*” so as to “*determine which function or keyword should be focused on*” (p. 5, lines 1-4). This result “*is concrete, tangible and useful* (see *AT&T, 172 F.3d at 1358, 50 USPQ2d at 1452*) such that the methods/systems as now claimed are statutory process/system claims (see MPEP 2106 (IV)(b)(ii) Computer-Related Processes . Limited to a Practical Application in the Technological Arts). Accordingly, the withdrawal of the outstanding informality rejection is in order, and is therefore respectfully solicited.

The rejections under 35 U.S.C. §112, second paragraph should be overcome by the method for displaying a dendrogram according to the invention, as now recited in the independent claims, comprising the steps of: clustering a plurality types of biopolymers based on a set of data obtained by experiments of the plurality types of biopolymers under different conditions, and displaying clustering results thereof in a form of a dendrogram; selecting a “subtree” (defined as “*extending from the selected branch to the downstream leaves*” p. 5, lines 14-15) in the dendrogram; and (i) displaying the selected subtree on a separate window (claim 1; Fig. 6; p. 8, 1<sup>st</sup> paragraph), or (ii) replacing the selected subtree with an icon in the dendrogram (claim 3; Fig. 7, p. 8, 2<sup>nd</sup> paragraph), or (iii) counting predetermined keywords in the selected subtree and displaying the predetermined keywords with a corresponding count of biopolymers whose biopolymer information contain one of the predetermined keywords (claim 5; Figs. 5, 8; “*Figure 8 is a view showing an exemplary screen displayed upon selecting a command “search for keyword contained in this subtree” from the menu shown in Figure 5. Among genes contained in the selected subtree, genes having gene information with predetermined keywords are counted and the results are displayed as search results 801.*” p. 8, last paragraph), or (iv) designating at least one keyword for the subtree and displaying the selected subtree and highlighting a location of each biopolymer in the selected subtree whose biopolymer information contains the designated keyword (claim 6; Fig. 8; “*When a keyword 802 is selected from the search results 801 with a mouse cursor 804 or the like, genes with this keyword 802 (in the figure, “ribosomal”) are marked on the dendrogram with marks 803 or the like.*” p. 9, 1<sup>st</sup> paragraph), thereby grouping biopolymers in the selected subtree into at least one function group

sharing a common functional characteristic (“*gene groups with similar functions*” p. 8, lines 17-18; “*genes belonging to the same cluster may possibly share common functional characteristics*” p. 3, line 7-8).

The invention is also directed to a system for implementing the methods recited in claims 1,3, 5-6, are recited in claims 8 and 12.

Regarding the new matter rejection against the recitation of “grouping biopolymers in the selected subtree into at least one function unit or function group,” it is being amended as “sharing a common functional characteristic” which is fully supported by the description of “*gene groups with similar functions* (p. 8, lines 17-18)” and “*genes belonging to the same cluster may possibly share common functional characteristics* (p. 3, line 7-8).”

Regarding the new matter rejection against the recitation of “a subtree selected by a user,” it is supported by “*A branch[subtree] in the dendrogram is selected with a mouse (Step 1709)* (p. 20, lines 12-13)” and Step 1706 in Fig. 17 “*select branch in dendrogram with mouse.*”

Regarding the new matter rejection against the recitation of “counting and displaying synonym counts,” it is supported by the description of “*When some of synonyms are included in the keywords, they can be processed as a single search target. The search structure includes members such as keyword (1601) for registering a keyword as a search target, times (1602) indicating the number of the keyword contained in the subtree, place (1603) for storing locations of genes on the dendrogram whose gene information include the keyword* (p. 18, last paragraph).”

Accordingly, the withdrawal of the outstanding informality rejections is in order, and is therefore respectfully solicited.

In view of all the above, clear and distinct differences as discussed exist between the present invention as now claimed and the prior art reference upon which the rejections in the Office Action rely, Applicant respectfully contends that the prior art references cannot anticipate the present invention or render the present invention obvious. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of

the above-captioned application, the Examiner is invited to contact the Applicant's undersigned representative at the address and phone number indicated below.

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